

CLAIMS

Following are a set of clean, rewritten Claims in accordance with amendments made herein.

1. (Twice Amended) An RF package comprising:

a multilayered dielectric substrate on which first and second dielectric substrates are formed, said multilayered dielectric substrate having a cavity in the second dielectric substrate where a semiconductor element is to be mounted on the first dielectric substrate;

BI a feed-through for connecting an inside and outside of said cavity and comprised of a coplanar line formed on said first dielectric substrate and an inner layer line formed on the first dielectric substrate obtained by forming said second dielectric substrate on said coplanar line, said coplanar line and said inner layer line sharing a signal conductor formed on the first dielectric substrate;

metal members formed at a connection interface between said coplanar line and said inner layer line on two sides of said signal conductor, and connecting ground conductors of the coplanar line and the inner layer line on the first dielectric substrate to a top surface of the second dielectric substrate at an edge of the second dielectric; and

a plurality of first via holes formed in said first dielectric substrate and a plurality of second via holes formed in said second dielectric substrate.

2. (Amended) A package according to claim 1, further comprising:

first ground conductors formed on an upper surface of said first dielectric substrate and arranged on two sides of said signal conductor to be away from each other at a predetermined distance;

a second ground conductor formed on said second dielectric substrate; and

said plurality of second via holes formed in said second dielectric substrate to connect said first and second ground conductors to each other at positions away from said connection interface between said coplanar line and said inner layer line.

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comp 3. (Amended) A package according to claim 2, wherein a distance λ between said connection interface between said coplanar line and said inner layer line and a center of one of said second via holes which is at an end nearest to said connection interface is represented by

$$\lambda < \frac{c}{2f\sqrt{\epsilon_r}}$$

where c , f , and ϵ_r respectively indicate a speed of light, a signal frequency, and a specific dielectric constant of said dielectric substrate.

4. (Amended) A package according to claim 2, wherein

said second via holes are arranged on two sides of said signal conductor at a predetermined pitch, and

a pitch λ_{p2} of said [first] second via holes in a signal propagating direction is represented by

$$\lambda_{p2} < \frac{c}{2f\sqrt{\epsilon_r}}$$

where c, f, and ϵ_r respectively indicate a speed of light, a signal frequency, and a specific

dielectric constant of said dielectric substrate.

5. (Amended) A package according to claim 4, wherein a pitch w of said second via hole in a direction perpendicular to the signal propagating direction is indicated by

$$W < \frac{c}{2f\sqrt{\epsilon_r}}$$

6. (Amended) A package according to claim 4, further comprising:

a third ground conductor formed on a lower surface of said first dielectric substrate; and said first via holes formed in said first dielectric substrate to connect said first and third ground conductors to each other, said first via holes being arranged on two sides of said signal conductor at a predetermined pitch.

7. (Amended) A package according to claim 6, wherein a pitch λ_{p1} of said first via holes in the signal propagating direction is represented by

$$\lambda_{p1} < \frac{c}{2f\sqrt{\frac{\epsilon_r + 1}{2}}}$$

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CAP 8. (Amended) A package according to claim 2, wherein said metal members have ends on a signal conductor side that are aligned with ends of said second via holes on the signal conductor side.

B2 11. (Amended) A package according to claim 1, wherein said metal members are semi-cylindrical metal electrodes having an edge at said connection interface which does not extend beyond said connection interface.

12. (Amended) A package according to claim 1, wherein said metal members are metal plates projecting from a side of said second dielectric substrate extending beyond said connection interface in a direction toward said coplanar line.
